

Claims**WHAT IS CLAIMED IS:**

*Sub A7*

1. An electrical connector, comprising:

a dielectric base;

5 a plurality of ground or power contacts in said dielectric base and comprising:

a mating portion for engaging a mating connector; and

a mounting portion for securing the connector to a substrate;

a plurality of signal contacts in said dielectric base, angled relative to

10 said plurality of ground or power contacts and comprising:

a mating portion for engaging a mating connector; and

a mounting portion for securing the connector to a substrate; and

a plurality of solder masses, each secured to a respective one of said mounting ends of said plurality of ground or power contacts and said

15 plurality of signal contacts for securing the connector to the substrate.
2. The electrical connector as recited in claim 1, wherein each of said plurality of signal contacts has opposed major surfaces defining sides and opposed minor surfaces defining edges, each of said edges positioned adjacent a respective one of said plurality of ground or power contacts.
3. The electrical connector as recited in claim 2, wherein said plurality of signal contacts extend transverse to said plurality of ground or power contacts.
- 25 *Sub AB*

4. The electrical connector as recited in claim 3, wherein said plurality of signal contacts extend generally perpendicular to said plurality of ground

~~or power contacts.~~

1P 5 5. The electrical connector as recited in claim 1, wherein each of said plurality of signal contacts has opposed major surfaces defining sides and opposed minor surfaces defining edges, wherein a coupling between said plurality of signal contacts and plurality of ground or power contacts is greater than a coupling between adjacent signal contacts for reducing cross-talk.

*electro  
magnetic*

10 6. The electrical connector as recited in claim 1, wherein two of said plurality of ground or power contacts flank at least one of said plurality of signal contacts.

15 7. The electrical connector as recited in claim 6, wherein said plurality of signal contacts extend transverse to said plurality of ground or power contacts.

20 8. The electrical connector as recited in claim 7, wherein said plurality of signal contacts extend generally perpendicular to said plurality of ground or power contacts.

9. The electrical connector as recited in claim 6, wherein said plurality of ground or power contacts are parallel.

25 10. The electrical connector as recited in claim 1, wherein said plurality of signal contacts are arranged in an array of rows and columns.

11. The electrical connector as recited in claim 10, wherein said plurality of ground or power contacts extend between adjacent rows of signal contacts.

5 12. The electrical connector as recited in claim 11, wherein said plurality of ground or power contacts extend the entire length of respective rows of said signal contacts.

10 13. The electrical connector as recited in claim 1, wherein said dielectric base includes  
a plurality of apertures extending therethrough and corresponding to said plurality of ground or power contacts and said plurality of signal contacts;

15 a mounting surface positionable adjacent the substrate; and  
a plurality of recesses in said mounting surface in communication with said plurality of apertures, wherein said mounting portions of said plurality of signal contacts reside within a corresponding one of said plurality of recesses.

20 ~~Sub a~~ 14. The electrical connector as recited in claim 1, wherein said dielectric base has a mating surface for engaging a mating surface of a mating connector, said plurality of ground or power contacts and said signal contacts extending past said mating surface of said dielectric base.

25 15. The electrical connector as recited in claim 1, wherein said plurality of ground or power contacts and said signal contacts reside entirely within said dielectric housing.

SEARCHED - INDEXED - SERIALIZED - FILED

112  
not  
buried

16. The electrical connector as recited in claim 1, wherein said solder masses are solder balls.

5 17. The electrical connector as recited in claim 1, wherein said solder masses are reflowable.

*A10*  
18. An electrical connector, comprising:

10 an insulative housing having a plurality of apertures extending therethrough;

a plurality of contacts, each in a respective one of said plurality of apertures and comprising:

a mating portion for engaging a contact on a mating connector; and

a mounting portion for securing the connector to a substrate; and

15 a plurality of solder masses, each secured to a respective one of said mounting ends of said plurality of contacts.

19. The electrical connector as recited in claim 18, wherein said solder masses are solder balls.

20 20. The electrical connector as recited in claim 18, wherein said solder masses are reflowable.

21 21. The electrical connector as recited in claim 18, wherein said 25 plurality of contacts are arranged in an array of rows and columns.

22. The electrical connector as recited in claim 18, wherein said

insulative housing further comprises:

a mounting surface positionable adjacent the substrate; and

a plurality of recesses in said mounting surface in communication with said plurality of apertures, wherein said mounting portions of said

5 plurality of contacts reside within a corresponding one of said plurality of recesses.

23. The electrical connector as recited in claim 22, wherein said mounting portion of said plurality of contacts each include, an angled

10 portion residing within a corresponding one of said recesses and receiving said solder mass.

24. The electrical connector as recited in claim 23, wherein said angled portion is generally parallel to the substrate.

15 25. The electrical connector as recited in claim 22, wherein said plurality of recesses are rectangular.

) reverse  
rec

11 26. The electrical connector as recited in claim 18, wherein said 20 dielectric base has a mating surface for engaging a mating surface of a mating connector, said plurality of contacts extending past said mating surface of said dielectric base.

12 27. The electrical connector as recited in claim 18, wherein said 25 plurality of contacts reside entirely within said dielectric housing.

are, bases  
with in  
the h sny

13 28. The electrical connector as recited in claim 18, wherein said

insulative housing is generally planar.

*Sub A12*  
29. The electrical connector as recited in claim 18, wherein said insulative housing comprises:

5 a generally planar base having a periphery; and  
a wall extending from said periphery of said base and adapted to engage side walls of a mating connector.

30. The electrical connector as recited in claim 18, wherein said 10 mounting portion of said plurality of contacts each include an angled portion receiving a corresponding one of said solder masses.

31. The electrical connector as recited in claim 30, wherein said angled portion is generally perpendicular to said mating portion.

15  
*Sub A13*  
32. An electrical connector, comprising:  
an insulative housing with a mating face positionable adjacent a mating connector and a mounting face positionable adjacent a substrate;  
at least one contact extending between said mating face and said 20 mounting face of said insulative housing and including a tail portion; and  
a solder mass secured to said tail portion for securing the electrical connector to the substrate.

33. The electrical connector as recited in claim 32, wherein said solder 25 mass is a solder ball.

34. The electrical connector as recited in claim 32, wherein said solder

mass is reflowable.

35. The electrical connector as recited in claim 32, wherein said tail portion includes an angled portion.

5

36. The electrical connector as recited in claim 35, wherein said angled portion extends generally parallel to the substrate.

37. The electrical connector as recited in claim 35, wherein said angled

10 portion extends generally perpendicular from said contact.

38. The electrical connector as recited in claim 32, wherein said at least one contact comprises an array of contacts.

15

39. The electrical connector as recited in claim 32, wherein said at least one contact extends from said insulative housing.

112  
40. The electrical connector as recited in claim 32, wherein said at least one contact resides entirely within said insulative housing.

20

add  
a121

add  
c3

add  
f1